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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,340	10/31/2001	James M. Little	PW 0249736 P12828	5257

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,340

Applicant(s)

LITTLE, JAMES M.

Examiner

Lawrence B Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 20- 21, 23-24 26-27, 29-30 is/are allowed.
6) ☒ Claim(s) 1,4,5,8-10,13,14,17-19,22,25 and 28 is/are rejected.
7) ☒ Claim(s) 2,3,6,7,11,12,15 and 16 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 31 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 4 recites the limitation "a second gain element" in line 11. Applicant has failed to disclose a first gain element in earlier portion of the claim.
3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 8 recites the limitation "the second combiner" in line 8. Applicant has failed to disclose a first combiner in earlier portion of the claim.
4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 9 recites the limitation "a second combiner" in line 5. Applicant has failed to disclose a first combiner in earlier portion of the claim.
5. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 13 recites the limitation "a second combiner" in line 11. Applicant has failed to disclose a first combiner in earlier portion of the claim.

Applicant's claim 13 recites the limitation "a second gain element" in line 14. Applicant has failed to disclose a first gain element in earlier portion of the claim.

6. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 17 recites the limitation "a second combiner" in line 9. Applicant has failed to disclose a first combiner in earlier portion of the claim.

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claim 18 recites the limitation "a second combiner" in line 11. Applicant has failed to disclose a first combiner in earlier portion of the claim.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 5, 10, 14, 19, 22, 25 and 28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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10. Claims 1, 19, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Berkhout et al. (US Patent 4,736,163).

(1) With regard to claim 1, Rousos et al. discloses in Fig. 3, an adaptive slicer threshold generation system, comprising; a first moving average filter (11) to determine a first average value of a first binary signal; a second moving average filter (11^h) to determine a second average value of a second binary signal; and a combiner (26) to combine the first average value of the first binary signal and the second average value of the second binary signal to generate a combined output (5) (col. 7, lines 3-23).

(2) With regard to claim 19, claim 19 inherits all limitations of claim 1 as claim 19 only discloses the method surrounding the devices disclosed in claim 1.

(3) With regard to claim 22, claim 22 inherits all limitations of claims 1 and 19.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berkhout et al. (US Patent 4,736,163).

Berkhout et al. discloses in Fig. 3, an adaptive slicer threshold generation system, comprising a minimum detector (10) to determine a minimum value of a binary one; a peak detector (10^h) to determine a maximum value of a binary zero; and a combiner (26) to combine the minimum value of the binary one and the maximum value of the binary zero to

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generate a combined signal. The detectors of Berkhout et al. these detectors are adapted to detect peaks having negative and positive polarity as they are applied to their respective moving average filter. It would be obvious to one skilled in the art that these detectors are capable of determining both a minimum value of a binary one and a maximum value of a binary zero.

13. Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rousos et al. (US Patent 3,947,769 in view of Berkhout et al. (US Patent 4,736,163).

(1) With regard to claim 10, Rousos et al. also discloses in Fig. 1, a receiver system, comprising; a receiver circuit (10); an antenna (11) coupled to the receiver circuit; an adaptive slicer threshold generation system coupled to the receiver circuit and a combiner (39) to combine the first binary signal and the second binary signal to generate a combined output (39C).

Rousos et al. does not disclose the adaptive slicer threshold having a first moving average filter to determine a first average value of a first binary signal, a second moving average filter to determine a first average value of a second binary signal.

However, Berkhout et al. teaches a first moving average filter to determine a first average value of a first binary signal, a second moving average filter to determine a first average value of a second binary signal.

One skilled in the art would have clearly recognized that a first moving average filter to determine a first average value of a first binary signal, a second moving average filter to determine a first average value of a second binary signal is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Berkhout et al. to modify

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the invention of Rousos et al. as a method of increasing the reliability of the adaptive slicer (col. 1, lines 50-56).

(2) With regard to claim 14, claim 14 inherits all limitations of claim 10 above.

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rousos et al. (US Patent 3,947,769 in view of Berkhout et al. (US Patent 4,736,163).

Rousos et al. also discloses in Fig. 1, a receiver system, comprising; a receiver circuit (10); an antenna (11) coupled to the receiver circuit; an adaptive slicer threshold generation system coupled to the receiver circuit and a combiner (39) to combine the first binary signal and the second binary signal to generate a combined output (39C).

He does not however disclose comprising a minimum detector to determine a minimum value of a binary one; a peak detector to determine a maximum value of a binary zero; and a combiner to combine the minimum value of the binary one and the maximum value of the binary zero to generate a combined signal.

However, Berkhout et al. discloses in Fig. 3, an adaptive slicer threshold generation system, comprising a minimum detector (10) to determine a minimum value of a binary one; a peak detector (10¹) to determine a maximum value of a binary zero; and a combiner (26) to combine the minimum value of the binary one and the maximum value of the binary zero to generate a combined signal. The detectors of Berkhout et al. these detectors are adapted to detect peaks having negative and positive polarity as they are applied to their respective moving average filter. It would be obvious to one skilled in the art that these detectors are capable of determining both a minimum value of a binary one and a maximum value of a binary zero.

One skilled in the art would have clearly recognized that a minimum detector to determine a minimum value of a binary one; a peak detector to determine a maximum value of a binary zero; and a combiner to combine the minimum value of the binary one and the maximum value of the binary zero to generate a combined signal is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Berkhout et al, to modify the invention of Rousos et al. as a method of increasing the reliability of the adaptive slicer (col. 1, lines 50-56).

15. Claims 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkhout et al. (US Patent 4,736,163) in combination with Rousos et al. (US Patent 3,947,769) in further view of Labelle (US Patent 6,026,773).

(1) With regard to claim 25, Berkhout et al. discloses in Fig. 3, an adaptive slicer threshold generation system, comprising means for determining a first average value (15) by combining a first received binary signal (11) and a first delay signal (12), means for determining a second average value (15¹) by combining a second received binary signal (11¹) and a second delay signal (12¹), means for combining the first average and the second average (26) to generate a combined output. Berkhout does not explicitly disclose setting a value of a slicer threshold within a data eye.

However, Rousos et al. discloses in Figs. 1 and 3, a threshold correction system wherein he sets a value of a slicer threshold within a data eye.

One skilled in the art would have clearly recognized that a threshold correction system wherein he sets a value of a slicer threshold within a data eye is a well-known technique introduced in many references. Therefore it would have been obvious to one of

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ordinary skill in the art at the time of invention to apply the method as taught by Rousos et al, to modify the invention of Berkhout et al. as a method of more precise functionality of an adaptive slicer.

Neither Rousos et al. nor Berkhout et al. disclose a machine-readable storage medium and machine-readable program code, stored on the machine-readable program code having instructions to perform the tasks of the adaptive slicer.

However, Labelle discloses an adaptive slicer circuit in Figs. 9 and 15, operated by a combination of program code elements in computer-readable form embodied in computer-readable medium.

One skilled in the art would have clearly recognized that a machine-readable storage medium and machine-readable program code, stored on the machine-readable program code having instructions to perform the tasks of the adaptive slicer is a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Labelle to modify the invention of Berkhout et al. in combination with Rousos et al. to increase reliability of the adaptive slicer.

(2) With regard to claim 28, claim 28 inherits the limitations of claim 25, above.

Allowable Subject Matter

16. Claims 2-3,6-7, 11-12, 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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17. Claims 4, 8, 9, 13, 17, 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Conclusion


18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 703-305-6969. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
August 3, 2004


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